Second Annual Air Medical Clinic Held At Geo. Wash. University

THE AIR LINE PILOT

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Fast Tempo of Current Happenings Keeps Hdqrs. Occupied

LATE NEWS IN BRIEF

Gravelly Point

According to latest reports around Washington, the new Washington National Airport will be ready for use by May 1, 1941. There are some indications that it may be in full operation even sooner.

Newark

There are some rather strong rumors afoot that the Newark Airport will shortly be opened again for air line and military use.

Stratoliners

Recently, New York newspapers carried a story that negotiations were in progress between the British Government and Transcontinental and Western Air, for the purpose of purchasing the Stratoliners now owned and operated by the latter. These reports resulted in quite a furor in air line circles and were promptly denied by TWA officials.

Grieved

Laddie, a brokenhearted airdale, who refused to eat after his master enlisted in the Army four months ago, was recently given a blood transfusion to bolster him for an air liner flight to the west coast for a reunion with his master, Private Everett Scott, who awaited him. Laddie was so weak and sick that veterinarians despaired that he would be able to complete the trip. We had hoped that he would make it—and he did. But, due to the long starvation period, to which he subjected himself, Laddie, although he appeared to rally after the reunion, died the second day after his arrival.

Promoted

On the list of recent promotions in the Army is the name of Colonel Donald H. Connolly who has just been promoted to the rank of General. General Donald H. Connolly at the present time is Administrator of the Civil Aeronautics Administration.

20,000

Bombers, 20,000 of them, is the goal of the War Department, according to recent reports from Washington. In the near future, Congress will be asked to provide two billion dollars to pay for their construction. These 20,000 bombers, in addition to the 18,000 military airplanes of all types, will be included in the existing program, a large proportion of which necessarily will be for training planes. The auto industry in Detroit is being sounded out with the view of placing the order with them. Just how many of the new planes will go to the Army and how many to England is not divulged, but, presumably, half will be for export. The order, when it materializes, will call for 8,000 two-engine light bombers, 8,000 medium

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Contract Program Nears Completion

Apparently the country's fastest mode of transit, air transportation, and the fast tempo of related events are synonymous. Be all that as it may, things surely have been moving at a dizzy pace since 1941 took the helm. Hearings, meetings, new regulations, national defense problems, employment contract conferences, convention mandates, and a hundred and one other happenings of the "must" variety have certainly added to the conclusions that everyone in the business is rapidly reaching that which can best be described by the phrase, "never a dull moment."

58 Days and 17,206 Miles

Since the 1940 convention closed, President Behncke has traveled 17,206 miles and spent 58 days away from Headquarters attending to matters that happened in rapid succession and mostly unpredictable as to either time, extent or place, but, nevertheless, all vitally important to the piloting profession.

Status of Contract-Making Program

In the contract mill there are the following agreements: Eastern Air Lines, approximately completed; Panagra, nearing completion; National Air Lines, in negotiation. Contract amending conferences are in progress with TWA and American Airlines and the current indications are that mutually satisfactory conclusions will shortly be reached.

Among other things all this has contributed to the *AIR LINE PILOT'S* falling short of its usual deadline.

A Much-Welcomed Spring

It is expected that the ushering in of a much-welcomed spring and summer and the unceremonious removal of a severe, arrogant, and tricky winter will make it possible for everyone to do a bit of catching up on the great mass of work that has accumulated.

PANAGRA Employment agreement conferences on Pan American-Grace Airways, Inc., were renewed on February 26, 1941. Since that time, several additional conferences have been held, and good progress has been made. All concerned are hopeful of early, mutually-satisfactory, results. Shown here are the conferees in action, and a perfect example of how not to take a flash-bulb picture. L. to r.: Charles Lesesne, Chmn., Council 38; David L. Behncke, President ALPA; H. R. Harris, Vice President, Panagra; and Ed Paxton, Panagra representative. Vice President Harris' office is on the 59th floor of the Chrysler Building overlooking New York's imposing sky line. The conferences were held 59 floors above the ground while the conferees enjoyed their noon repast two floors below the ground. Sixty-one floors separated the workshop from the mess hall.

Omnibus Rule Bars Permits To New Lines

In an omnibus decision involving Delta, PCA, Southern, Dixie, and EAL, rendered January 30, 1941, the Civil Aeronautics Board, among other things, ruled that Southern Air Lines, Inc., was not fit, willing, nor able to conduct an air line operation, and that it was more in the public interest to have Dixie Airlines' proposed new route operated by an already existing

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—United Air Lines Photo

KNIGHT *What's in a name? It reads like the pages from a story book...veteran pilot Jack KNIGHT, NIGHT-flying pioneer. The phrase "civilization fares as pioneers dare" is certainly packed with truth. Twenty years ago, February 23, 1921, Jack Knight dared to fly a crude forerunner of today's fast, sleek air liner from North Platte, Neb., to Chicago at night, thereby proving that it could be done, and today, air commerce passes regularly in the night. The picture exemplifies the past and present in pilot regalia and air line planes.*

UAL INSTITUTES PILOTS' PENSION

The board of directors of United Air Lines has approved a pension plan for employees of the company, such plan to become operative January 1, 1941, following acceptance by company personnel. In order to be eligible in the participation of the plan, personnel must have been with UAL one year. Women and pilots must be 25 years of age and all other employees 30. Most employees will retire at 65, but the pilots' and women's retirement age will be 60.

Supplements Social Security Benefits

The plan is designed to supplement benefits under the Federal Social Security Act and provides for the purchase of retirement annuities from an insurance company by the joint contributions of employees and company. The contributions to be made by the company will represent approximately the same amount as paid in by the employees. Past services, it is reported, will be recognized and the accrued liability will be paid up by the company. Participation in the plan will be voluntary, but it will be necessary for 75 per cent of

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End of Chicago's Municipal Airport Tangle Seen

Apparently the ten-year-old Chicago Airport entanglement that so tenaciously retarded its building, will end with the coming of the spring of 1941.

Bisecting Railroad Tracks Long a Dangerous Obstacle

During the past several months, the Air Line Pilots Association has thoroughly scrutinized this project for the purpose of finding out just what the degree of completion of all of the remaining un-

(Continued on Page 4, Col. 1)

Greene, Behncke Lecturers At Medical Clinic

About all that is known of aviation medicine was talked about and summed up at the Second Annual Postgraduate clinic held at the George Washington University School of Medicine at Washington, D. C., on February 3-7, 1941, inclusive.

The purpose of the course given at the George Washington University is to teach the best methods of examining prospective flyers and also to instruct them in observing the results of high altitudes and great speeds upon a flyer's brain, nervous system, and muscular coordination.

Last Year's Courses Are Obsolete

Dr. William Thornwall Davis, professor of ophthalmology, said, "So rapid has aviation medicine

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OXYGEN

The question of whether or not oxygen apparatus should be included as regular air line equipment has long been controversial. This argument has been brought to an end by a recent amendment to the Civil Air Regulations which are to become effective May 1, 1941. The new oxygen section in the CAR is numbered 61.743 and reads as follows:

"No air carrier aircraft shall be operated in scheduled air transportation at an altitude exceeding ten thousand feet above sea level continuously for more than thirty minutes or an altitude exceeding twelve thousand feet above sea level for any length of time unless such aircraft is equipped with an effective oxygen apparatus and an adequate supply of oxygen available for the convenient use of the operating crew and proper use is made of such apparatus."

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OBSTRUCTIONS

Obstructions around airports have long been troublesome and a distinct menace to air safety. The Air Line Pilots Association has fought long and relentlessly to solve the problem. No one is more conscious, than the men at the controls, of the continuous hazard that just one obstruction in the vicinity of a landing field continuously presents to safe flying.

In a recent letter to Headquarters, one of our members said, "Many of the regular air line pilots accept obstructions around airports much the same as a dog accepts fleas because they assume there isn't much they can do about it." This may, to an extent, be true, but nevertheless, something must be done about it. A pilot who goes into an airport regularly is not as apt to get into trouble as a student or itinerant pilot who may be landing at an airport for the first time and not land at the same point again for a protracted period.

—Acme Photo

In the picture we see a crumbled radio tower and a wreck of a Hudson Bombing Plane that was en route from Burbank, California, for delivery to the British government. The tower was 132 feet high and in close proximity to the El Paso Airport. There appears to be some question as to the real cause of the accident which, of course, will never be determined because the crew was killed. Some say that the airplane struck the tower while landing and others say that it, for some reason, went out of control in the air and came into contact with the tower before hitting the ground.

Without going into details, it is certain that everyone is in agreement that radio towers and other obstructions in the vicinity of landing areas are a distinct nuisance; that those already erected should be removed, and that the erection of any future man-made obstructions should be relentlessly prohibited. It is not unusual for a municipality and the Federal government to spend huge sums of money constructing a good airport, but that is only the beginning. Then it becomes a matter of carrying on a continuous fight to stop the erection of dangerous obstructions. Everyone who has any control of the granting of permission to erect any kind of obstruction in the vicinity of airports, such as the Federal Communications Commission, the CAA, state organizations, and municipalities, should co-operate to every possible extent to keep the air lanes, to and from air terminals, obstruction free. This is only common sense because all other right of ways, whether over land or water, are effectively safeguarded by many forms of protection, including Federal and State legislation; therefore, isn't it reasonable to assume that the same should apply to the airways? The answer can be only in the affirmative.

There are several Congressional investigations in progress at the present time into the matter of increasing the safety of air travel. It might be well for these groups to look into the matter of placing proper Federal legislative power into the hands of the proper Federal regulatory agencies to prevent the obstructing of airways, especially where such airways make contact with landing areas.

Recently, Administrator Connolly of the CAA made the following very pertinent remarks in a letter to the Association:

> *"With respect to the general obstruction problem: The Air Carrier Inspection Service is now engaged in survey of obstructions on all air carrier airports with a view to determining the possibility of obstruction removal, additional obstruction lighting where necessary, and the application of restrictions in case removal or lighting cannot be obtained."*

If the foregoing described effort is carried to its ultimate conclusion, it will be a broad step in the direction of increasing the safety of military, air line, and all other types of flying.

—*David L. Behncke*

'HARRY, THE HAWK' LANDED ON A COAL BARGE

Scribe Edits, Rehashes, Compiles, Mutilates, Submits

By W. H. KENNEDY
Council No. 52, UAL
New York, N. Y.

Council No. 52 has started a "New Deal" for the column. . . . Hope it works. . . . Park Learned having been transferred to Chicago, the council was left without a reporter, cub or otherwise. So, it was decided to leave it up to the members whether they wanted to be represented in the *AIR LINE PILOT*, or not. H - - l, one feller can't gather the news items from such a scattered membership. They're scattered all over three states. So, it was up to all the members to submit news items, gossip, and what-have-you, and the so-called "correspondent" would edit, rehash, compile, mutilate, and submit. So, here goes. The correspondent accepts no responsibility for lost characters or damaged reputations.

ALPA Business Comes First, Followed by "Fertilizer Fiesta"

Our monthly meetings are being held at a downtown hotel, and the business meeting starts at 5:30 p. m. Nothing but regular ALPA business at this part of the meeting; then dinner at 7:30 p. m. During and after dinner, a general get-together and old-fashioned bull session—an open forum with no holds barred and plenty of hitting in the clinches. So far, it has worked swell, and has brought the gang closer together and contributed to the answering of many questions. We are all looking forward to widening the scope of the idea and contacting the other councils in the New York area regarding the holding of joint council meetings along the same lines. Each council, under this plan, would hold its own business meeting separately, then all join for dinner and the "fertilizer fiesta." We like the idea and hope that the other fellows will see it the same way, and get together to become better acquainted and cuss and discuss our mutual problems. Of this—more anon!

It's a Vicious Circle—He Smoked, Got Thin—Stopped Smoking, Got Fat

It's really quite astounding the many and varied subjects that a gang like that will talk about when they get together. Take our last dinner for instance. J. O. Johnson (The Great Axel) was on a very strict diet. It seems that Jimmy used to smoke a great many cigarettes, so many in fact that they ruined his appetite—he lost weight. He quit smoking; his appetite picked up, and so did his weight. Now he's dieting to lose the excess weight. Net result: No smoking pleasure — no eating pleasure. What the h - - l, it's a vicious circle.

Possible Active Duty Always a Favorite Topic

The ever-present subject of the possibilities of active duty with the Army, Navy or Marine Corps, was a favorite topic, of course. The consensus of opinion seemed to be that the military services realized that they could not approach the amount of flying time that the air line men are getting

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By FLOYD H. DAVIDSON
Council No. 34, UAL
Oakland, Calif.

FOREWORD—

This is the second of a series of articles presented by Council No. 34 on some of the many members of ALPA who had much to do with the beginnings of the air transport industry. Floyd H. Davidson has written the following

HARRY W. HUKING
Ripley Took Note

interesting sketch of Harry W. Huking, pioneer pilot, and a charter member of ALPA. Pilot Huking also was a member of the early Air Mail Pilots of America, and was a member, and at one time president, of the succeeding organization, the National Air Pilots Association. He is truly a pioneer of early pilot organization effort. Currently, he is AIR LINE PILOT scribe for Council No. 34.

Well, vacations are now in order and a number of the boys are taking advantage of the opportunity. But that is not the news and I don't know any so I'm gonna pick on someone. And the victim will be that intrepid aeronaut, "Harry, the Hawk."

Harry's Depredations Cause Deportation to Brooklyn

Master Harry W. Huking made his first landing in the vale of tears, rough air, and headwinds, at Congers, New York on May 30, 1896. At this time, there was one prominent feature noticed. His hair was not too abundant. That feature is again beginning to become prominent. After surviving measles, whooping cough, and such kindred afflictions, he succeeded in making himself the pride of his mother, the bane of the school board, and the scourge of the neighbors. He denies it but it has been said that he was a very bad influence for his sister and brother. It is further rumored that because of Harry's depredations, the family was prevailed upon to move or was deported to that province surrounded by New York—Brooklyn.

Completes School Curriculums—Teachers Just Gave Up

Here, in the association of such characters as "Legs" Diamond, "Lucky" Luciano, etc., Harry acquired his education. Of course, during the search for learning, he happened to find certificates that read something to the effect that one Harry W. Huking had finally completed the required curriculums of the Brooklyn Grammar School and High School. Once

(Continued on Page 5, Col. 4)

"To fly West, my friend, is a flight we all must take for a final check."

In Constant Memoriam

Active

Accidental

Adams, John B.—U. A. L.
Anderson, Lloyd,—U. A. L.
Andert, Paul A.—U. A. L.
Barron, John M., Jr.—A. A.
Bickford, L. A.—Panagra
Bigelow, Ed.—U. A. L.
Blom, Edwin W.—U. A. L.
Bogen, W. L.—W. A. E.
Bohnet, Frederick L.—T. W. A.
Bolton, Harvey F.—T. W. A.
Bontrager, C. M.—B. A. L.
Borchers, Adrian—P. A. A.
Bowen, J. E.—T. W. A.
Bowen, Lewis L.—B. A.
Brandon, James L.—U. A. L.
Briggs, Francis W.—A. A.
Broughton, D. E.—U. A. L.
Brunk, Paul S.—P. A. A.
Bucher, Charles L.—P. A. A.
Chamberlain, Cassius B.—N. W.
Cohn, Hanley G.—W. A. S.
Cope, Alonzo—Marine Airways
Cox, Floyd—Ludington
Davis, Alfred W.—U. A. L.
Davis, Douglas—E. A. L.
DeCesare, Frank—Panagra
De Cesaro, Joseph G.—U. A. L.
Dietz, Stuart G.—E. A. L.
Dixon, Andrew, Jr.—D. A. L.
Dunn, Stephen—Panagra
Fey, Howard—U. A. L.
Fields, Glenn T.—A. A.
Fuller, Ray E.—A. A.
George, Hal—T. W. A.
Grover, R. Boyd—U. A. L.
Hald, Arthur A.—N. W.
Hale, S. H.—E. A. L.
Hallgren, W. A.—A. A.
Hill, George W.—A. A.
Holbrook, Clyde M.—A. A.
Holsenbeck, W. M.—P. A. A.
Jamieson, W. L.—E. A. L.
Jones, Lloyd E.—U. A. L.
Kelsey, Harold J.—A. A.
Kincanon, Ted N.—A. A.
King, George B.—P. A. A.
Komdat, Albert C.—E. A. L.
Lewis, Harry C.—T. W. A.
Livermore, Joe—N. W.
Lucas, Al—W. A. S.
Lucas, Verne—Ludington
Lynn, John B.—C. & S. A. L.
McMickle, Harold—Panagra
Malick, Forrest E.—U. A. L.
Mamer, Nick B.—N. W.
Marshall, Gerald V.—A. A.
Merrifield, Austin S.—U. A. L.
Montee, Ralph—T. W. A.
Montijo, John G.—V. A. T.
Morgan, Howard R.—T. W. A.
Mossman, Russell C.—C.&S.A.L.
Neff, Harold—U. A. L.
Noe, Earl J.—T. W. A.
Norby, Raymond B.—N. W.
Odell, M. T.—A. A.
Owens, Clifford P.—W. A. E.
Paschal, A.—P. A. A.
Perry, J. E.—E. A. L.
Person, Addison G.—P. A. A.
Potter, Norman W.—U. A. L.
Pursley, C. H.—Panagra
Radoll, R. W.—U. A. L.
Riggs, Russell S.—A. A.
Robbins, Wm. J. B.—A. A.
Rose, John A.—K. L. M.
Rousch, Chas. W.—N. W.
Rust, F. H.—A. A.
Salisbury, Hervey M.—T. W. A.
Sandblom, J. V.—C. P.
Sandegren, Thomas E.—U. A. L.
Sauceda, J. M.—P. A. A.
Scott, P. T. W.—T. W. A.
Scott, Philip C.—U. A. L.
Scroggins, Lowell V.—P. C. A.
Sharpnack, J. W.—U. A. L.
Sheets, Don W.—Panagra
Sherwood, George C.—W. A. E.
Supple, Robert E.—Panagra
Tarrant, Harold R.—U. A. L.
Terletzky, Leo—P. A. A.
*Thomas, L. E.—E. A. L.
Thompson, A. R.—U. A. L.
Underwood, Sanford L.—A. A.
Vance, Claire K.—U. A. L.
Waldron, Joe—A. A.
Walker, M. A.—P. A. A.
Wallace, Clyde W.—T. W. A.
Weatherdon, Edwin—A. A.
West, F. W.—N. W.
Wieselmayer, Otto—P. A. A.
Williamson, P. B.—E. A. L.
Worthen, John A.—W. W.
Young, George S.—U. A. L.
Zeier, Carl F.—C. & S. A. L.

Natural

Blomgren, Lloyd I.—A. A.
Cochrane, Robert M.—U. A. L.
Fife, John A.—C. A.
Hohag, R. J.—N. W.
McConaughey, Ira M.—A. A.
Phelps, Henry T.—P. A. A.
Swanson, Axel—A. A.

Inactive

Anderline, Frank W.; Ashford, Ted; Barr, Julius; Burford, Dean W.; Caldwell, G. Q.; Drayton, Chas. M.; Hulsman, Herbert W.; Noyes, Dewey L.; Ormsbee, F.; Riddle, Glenn L.; Shelton, Boyd M.; Stark, Howard C.; Veblen, E. H.; Waldridge, Donald C.; Wheaton, Harold H.; Whittemore, Fred W.; Wolf, John F.; Willey, Sidney L.

Waiting List

Brock, Wm. S.; Kiser, Daniel.

Unemployed

Darby, James E.; Downs, Lloyd; Hays, George L.; Keadle, Floyd E.; Rhiner, L. H.

Honorary

Rogers, Will

* *Apprentice Member.*

Gen. Connolly and E. P. Warner Talk Before 1940 ALPA Convention

Gen. Donald H. Connolly, Administrator of the Civil Aeronautics Administration, and Edward P. Warner, Sc. D., Vice Chairman of the Civil Aeronautics Board, were guest speakers at the 1940 convention of the Air Line Pilots Association. Due to the frank, timely, and educational nature of these addresses, the AIR LINE PILOT is publishing the complete texts in serial form in this and future issues. The first installments follow:

Warner Said:

"Mr. Behncke, delegates to the convention. I am very flattered with that introduction, especially by Mr. Behncke's saying that I have for some time been regarded as one of you. This is the first time I have ever been privileged to take a badge away to prove it!

"I am sorry to be alone today, alone as far as the other Board members are concerned. The other members would all have wished to attend. You were good enough to invite us collectively. But we have discussions on air line rate procedure and other matters coming up next week which made it very difficult to leave Washington as a group at the present time. Since it was impossible for any considerable number of us to get away, they have asked that I represent them.

Last 12 Months Create Great Problems

"The twelve months since you last met in this city have been a period of great events, at home and abroad. They have created great problems for the American people, affecting the life of every American citizen. They affect air transport.

"There has been much talk of the importance of air transport, and its equipment and its people as a military auxiliary. But it is not as a military auxiliary that air transport is of primary importance to American capacity for self-defense; nor do I see any reason to anticipate any conditions in which that will be its greatest importance. Swift and easy communications are never more important than when industry and Government are meeting new problems imposed by necessity. It is *as transportation* that air transport is now required, and it is in that connection that it will continue to be required. Even if we were at war, that would still be true. The existence of the means of carrying by air those persons and those goods whose movement from place to place was important to the conduct of the war would still rank high among national needs.

Pilots' Professional Qualifications Highly Valued

"The existence of a great campaign of military preparation changes the conditions under which the need for air transportation is met, as it changes everything else. There has been much talk, within the last few days, of possible difficulty in securing an amount of air traffic—a traffic currently expanding at the phenomenal rate of over 50 per cent a year. There has been less talk of similar difficulties in connection with personnel; but no one knows better than you that they exist. You are here as the representatives of a group associated through their possession of professional qualifications that have never been as highly valued as at this moment.

National Safety and Air Transportation

"The rapidity with which airplane pilots can be trained to full professional fitness is one of the factors that measures national safety. The difficulty of securing pilots in adequate numbers for military purposes, for the instruction of other pilots, and for the maintenance of an air transport system keeping full pace with the demands upon it, are acute. It would serve no purpose to minimize or to deny difficulties of this sort, but all of us who are concerned with aviation in any capacity are concerned with minimizing their effects. So indeed is every citizen who has any understanding of the problem. All of us who have a special interest in air transportation — pilots, representatives of air line management, Government officials, and all the rest—have a common interest in using every item of equipment, and every element of organization, with the greatest possible efficiency and to the fullest possible extent. We all share an obligation to concentrate upon that matter and to bring forward any suggestions that we may devise for overcoming the effects of any shortages that may be threatened. We share the obligation to give careful consideration and fair examination to any proposals that may be made by others in that connection.

Revision of Structure of Government Agencies

"There have been, as you well know, other changes within the past year, in addition to those directly connected with military preparation and with the growth of air traffic. There has been a revision of the structure of the Government agencies dealing especially with the problems of civil aeronautics. Although it is five months since that change became effective, we receive daily evidence that it is still the subject of widespread misunderstanding. I hope that misunderstanding is not common in your organization, for you are concerned deeply enough with these matters to follow them in detail, but in view of its prevalence elsewhere, I am going to outline the present functions of the Civil Aeronautics Board and the way in which we deal with them and then talk in detail about some of those functions that are of special interest to the group of which you are representatives.

Functions of CAB and CAA

"The past duties of the Civil Aeronautics Authority have been divided between the Civil Aeronautics Board and the Civil Aeronautics Administration. The Board and the Administration are much affected by one another's action; we work in constant close association; but each organization has a certain quota of matters with respect to which it has the direct responsibility. The Board's quota includes the whole field of economic regulation, the investigation of accidents, the making of regulations relating to safety, and certain duties connected with the enforcement of the regulations.

"I need not say anything about economic regulation, because in that matter there has been absolutely no change since last year. Our duties are identically as they were a year ago, and the conditions under which we work upon them are equally unchanged.

Investigation of Accidents

"The investigation of accidents is a matter in which the ALPA has been especially interested. The Civil Aeronautics Board has received the responsibilities that were formerly those of the Air Safety Board; it has taken over the staff of the Air Safety Board, and the experience that the staff represents; and the work of investigation and report has gone forward. We have lost some senior members of the staff by their being called to military duty; we have added other members, in particular, Mr. Lederer, whom all of you knew well long before his association began with the Board. If I were asked to define what seems to us the major policies appropriate to this particular job of accident investigation, I would say that they were: To neglect no possible cause, even though it be at the cost of making presentation and exploration prolonged and tedious; and to lay stress rather upon underlying than upon immediate causes.

Lovettsville Accident Analysis

"We have had a good example of the first point recently before us in the shape of the report on the Lovettsville accident. We tried in that case to consider and to analyze, to see whether or not it could be excluded and if so, with what degree of certainty, not only each seemingly probable cause, but everything that could be regarded seriously as having been a possibility. We have heard some suggestions that involved an undue amount of speculation, and made for an unnecessarily bulky report. Your own views on the matter of how exhaustively the results of these investigations can best be presented would be of immense interest to us; but I, for one, believe that the method of looking into everything, and then presenting the results of the look, is the sound one. One is never sure that a bare possibility is going to be nothing more than that unless it is examined in detail to see in what shape the evidence leaves it.

Emphasis Upon Underlying Cause

"My second point, you will recall, was that of emphasis upon underlying cause. I have some personal background on that. For about a dozen years, I have worked on the Committee on Accidents of the National Advisory Committee for Aeronautics, which meets intermittently to study problems of accident classification and analysis and to consolidate the experience of the military and the civil agencies engaged with such matters.

Why It Happened, Most Important Question

"In the very first stages of that work we all concluded that it was a common error to be content with finding out what happened, without delving far enough into the much more important question of why it had happened. The remedy, and the insurance against recurrence, do not grow out of the physical facts of the case, but out of what may sometimes be a very remote cause. The immediate cause of an accident might be a failure of some mechanical part; but that accident might have become inevitable from the moment when there was employed, either in a factory or some maintenance shop, some inspector who was careless about the kind of work that he passed. An accident might be attributed to bad judgment on the part of the pilot — and little enough will be accomplished thereby, for there could certainly be no regulation more futile than one making it mandatory upon pilots to use good judgment. The significant fact in such a case is to discover whether the bad judgment was due to some temporary physical defect, or to the difficulty of the conditions under which the pilot was operating, or to an inherent personal unfitness that might have been discovered long before the accident occurred.

Difficult to Find True First Causes

"It is enormously difficult to find true first causes, and often it is impossible, but it is of primary importance to search for them if we are to make headway with removing them.

Connolly Said:

"Mr. Behncke and members of the ALPA: I am very glad that we dispensed with the formalities. Unlike Mr. Warner, I do not have any prepared paper to read you. In fact, we came here with more of a selfish viewpoint, not that we were going to try to tell *you* something, but for what *we* would get out of it. We would like to know you better, get your viewpoint, hear what you have to tell us. I have been with this organization only a short time—in fact, only since July. Most of my experience with Washington has been from the outside looking in. And from that viewpoint I have always noticed — or thought I noticed — that the people who were in Washington too long had their horizons come closer and closer to them, until their world was finally bounded by the boundaries of the District of Columbia; and along with that limited viewpoint they always came to feel that they knew all the answers. I think when a man gets in that position, particularly in anything that is as fast-moving as aviation, his usefulness is about gone.

"So, we would like to talk with you people who are out here on the firing line and get your viewpoint on these various problems on which we have to act, and we will be more likely to be right, or more nearly right, if we can get the viewpoint of the men and their experience in the cockpits.

A Family Meeting

"I brought with me five men from the Washington office. There are probably a number of questions you would like to ask as to where we have gotten on various lines of endeavor, or where we haven't gotten. With me are Mr. Anderson, Mr. Easton, Mr. Metcalf, Mr. Taylor, and Mr. Nichols. If we can turn this into a family meeting, it will be a whole lot more valuable to us. These men can tell us more about the details of what you would like to know than I can.

"I should like Mr. Anderson to tell you where we have gotten on the suggestions you made at the meeting that our Air Carrier Division had with the air line pilots in Kansas City last October. On some of the suggestions you made we have been able to do something; on others we have gotten a little way; on others we have not.

"As Mr. Warner was saying (we heard the latter part of his remarks), the Civil Aeronautics Authority does not exist any more as an operating entity. Its duties and responsibilities have been divided between the Civil Aeronautics Board and the Civil Aeronautics Administration. The Board comprises the duties that he has already explained to you. In the Civil Aeronautics Administration we have what is left. That is, we operate the Federal airways, including the Air Traffic Control, civilian pilot training, general inspection service, and a new one, when we got this $40,000,000 to make a start on the airport program, which is something that is not a new idea. It has been talked of for years, but finally we have something done. It is not very much, but at least we have a start. With this large amount of money being poured out, making new planes, and there being big expansion in the pilot training, the airport question was something that had not been given sufficient attention, either from the civil point of view or from the Army viewpoint.

Army Creates Congested Condition at Airports

"The Army has moved into fifty or sixty, and will be in about 100 civil airports of the country. To be sure, they have moved in at the invitation of the owners of those airports and they have wanted the Army units in there. They spend money. But for you it has created a very congested condition in a large number of places over the country. We have had a committee studying that, a committee made up of representatives of the CAB and the Army and the Navy and our people. The real answer, of course, is more airports, but we can't wait for that, so we are trying to readjust particularly the civil pilot training, our training schedule, and trying to get the Army and Navy to do the same.

Make Them Train 6 Miles Away at Some Airports

"We haven't progressed so far with that. In some places we have been able to get them clear off. In other places we let them base there, but make them do their training at least six miles away. But there are a lot of difficulties like contracts with fixed base operators there and men who run these air schools who bought planes, who conducted this training, and so we cannot move quite as fast as we would like to, because it is going to create a hardship on people who cannot afford it.

—*Wide World Photo*

GIANTS ***Uncle Sam's latest giant-winged defenders of democracy top the country's second highest giant peak, Mt. Rainier, which touches the skies at 14,408 ft. altitude. The planes are the air corps' latest four-engined Boeing bombers en route from McChord Field, Washington, to Seattle on a routine practice flight.***

Entanglement To End Soon

(Continued from Page 1)

finished work really was. The Association has repeatedly urged that all short cuts be taken to accomplish the ends desired, the principal of which is the removal of the troublesome bisecting railroad tracks that have been a dangerous obstruction to landing for such a long time at this field.

Only Railroad Construction Work Unfinished Is Signal System

A recent survey disclosed that the new railroad tracks which will carry the trains around the airport instead of across it, are completed, and that the only railroad construction work that remains unfinished is the signal system. It appears that this part of the work will be finished some time during March or, at the very latest, by the first of April. Then it will be a matter of ripping out the old railroad tracks and leveling off the grading. If this is done by manual labor, it will involve a lengthy delay of an indeterminable extent. If this work is done by machinery, it should be accomplished in several weeks.

ALPA Urges Use of Heavy Machinery

The Air Line Pilots Association has urged that, at the very moment the new signal system has been completed, no time be lost in moving in the necessary heavy machinery for the removal of the tracks and knocking down the grade. After this has been accomplished, it will then be only a matter of connecting up the runways, which have been completed with the exception of the part where the old tracks are now laid.

Another important improvement that was recently made at the Chicago Airport was the removal of the streetcar poles and wires along the east side of the field on Cicero Avenue. The wires along the west end of the field are also slated for removal and may be down before this paper goes to press.

Behncke Testifies Before Illinois Commerce Commission

Several months ago, David L. Behncke, the Air Line Pilots Association's President, testified before the Illinois Commerce Commission, pleading for the removal of the Cicero Avenue streetcar poles and live wires, in the interest of safety.

Airport Manager Deserves Much Credit

The main part of the credit for the removal of these wires should go to John Casey, the Chicago Municipal Airport Manager, who has been working silently and diligently for the improvement of the Chicago field for many years. It is suspected that his efforts have been at times greatly handicapped, but, nevertheless, he did not become dismayed and it appears that Chicago will shortly have one of the best airports in the nation.

Bar New Lines

(Continued from Page 1)

carrier, to wit, PCA. The decision was so broad it practically prohibited for all time the entry of any new air line into the domestic picture.

Southern Declared Insufficient

Southern Air Lines, Inc. had applied to the CAB for several routes radiating out of Atlanta, Georgia, namely, Atlanta to Savannah, via Milledgeville and Statesboro; Atlanta to Memphis, via Anniston, Birmingham, and Tupelo; Atlanta to Pensacola, via Columbus and Dothan; and Atlanta to Cincinnati. At present, Southern operates a school at Milledgeville, Ga., and it was unable to convince the Board that it could provide the necessary equipment and personnel, or that it had sufficient knowledge of the problems involved.

PCA Gains Additional Route Mileage

Both Dixie and Penn-Central were after the Pittsburgh-Birmingham route, with the award going to the latter. In ruling out Dixie, the Board made some sweeping statements which seem to imply that no new air line can ever hope to enter the domestic field as against existing carriers. The following is a verbatim excerpt from the Board's opinion:

> "In reaching this conclusion we recognize the fact that the considerations which lead us to this determination would be equally applicable in any case in which an existing air carrier is competing with a company without operating experience for a new route or service. The number of air carriers now operating appears sufficient to insure against monopoly in respect to the average new route case, and we believe that the present domestic air transportation system can, by proper supervision, be integrated and expanded in a manner that will in general afford the competition necessary for the development of that system in the manner contemplated by the Act. In the absence of particular circumstances presenting an affirmative reason for a new carrier there appears to be no inherent desirability of increasing the present number of carriers merely for the purpose of numerically enlarging the industry."

Delta and EAL Get Extensions

In the same decision Delta Air Lines was awarded a new route from Atlanta to Cincinnati, via Knoxville and Lexington, and an extension from Atlanta to Savannah, while EAL was given permission to include Birmingham on its route No. 5, as well as an additional stop at Brunswick, Georgia on its route No. 6. Delta's application to go into New Orleans was denied.

Dr. Greene Addresses ALPA Convention

Dr. Ralph Greene's talk, given before the 1940 convention of the Air Line Pilots Association on the morning of December 1, is appearing in the AIR LINE PILOT in serial form. Following is the third installment:

Aviation Medicine Is "Specialty of Specialties"

In our medical setup, and unlike other major air lines, we do not attempt to engage in the field of industrial medicine or to treat employees who may become ill or injured while in the service of the company. These cases are handled by competent physicians who are appointed to care for all industrial medical cases. It is our opinion that the flight surgeon has such great responsibilities in connection with the medical maintenance of a large group of pilots that his efforts should not be interrupted by emergencies in other fields of medicine. In addition to the routine duties of the medical department, research problems requiring much time and thought are constantly arising. Aviation Medicine has come to be recognized as the "Specialty of Specialties." The qualified flight surgeon must have a fairly wide training and a clear insight and working knowledge of a number of specialties, an effort which is ordinarily represented by a group of individuals rather than by the composite effort of the competent, duly trained flight surgeon. The importance of Aviation Medicine is

(Continued on Page 6, Col. 2)

LATE NEWS

(Continued from Page 1)

bombers, and 4,000 four-engine bombers of the "Flying Fortress" type.

Winner

Winner of the Clifford Burke Harmon Trophy for the year is Major Alexander P. de Seversky. The trophy was presented by President Roosevelt on December 19. The award created by the Ligue Internationale des Aviateurs was presented in the United States for the first time.

Priority

The new priority board of the National Advisory Defense Commission has established a commercial aircraft priority committee to coordinate the production of commercial air transportation equipment with the requirements of the National Defense Program. The administrative officer will be Captain Sidney M. Kraus, representing the commission's production division. The other members of the committee are Colonel John H. Jouett, President of the Aeronautical Chamber of Commerce of America, representing the aircraft industry, C. R. Smith, President of American Airlines, representing air transportation, Major A. J. Lyon, representing the Army, and Captain D. C. Ramsey, representing the Navy.

Alaska

In an application for a new route certificate recently filed with the Civil Aeronautics Board, Northwest Airlines seeks to establish a 2,520-mile air route from Minneapolis, Minnesota to Fairbanks, Alaska by way of Fargo, North Dakota. It is planned to have four fueling stops located at Regina, Edmonton, Grand Prairie, and White Horse, all located in Canadian territory. The application states that DC-3 equipment will be used. If this certificate is granted, it will be the second air link between the United States and Alaska, the first being operated by Pan American along the west coast of Canada.

Eighty Million

Forty million dollars of an eighty-million-dollar airport construction program has been appropriated by Congress. Originally, it was intended that the C.A.A. would have much to do with the expenditure of this money and the construction of the new airports for which this program called, but, according to latest reports, the C.A.A. has been relegated to the background, and the United States Army Engineering Corps is now practically in complete charge. It is felt that this change is due, primarily, to the national defense aspects of the airport expansion program.

Recommitted

Senator Pat McCarran's bill, S-1, to again make the C.A.A. independent and re-create the Air Safety Board, has been transferred recently from Senator Wheeler's Interstate Commerce Committee to Senator Bailey's Commerce Committee. Both are senatorial committees. According to Senator McCarran's office, this transfer had the approval of the Senator who was away from Washington at the time. Obviously, bills of this nature will not be given a hearing until the more important national defense bills have been disposed.

Sale

The Union Air Terminal at Burbank, California is about to change hands, when, as, or if, the deal is approved by the Civil Aeronautics Board, according to a joint statement by W. A. Patterson, president of United Air Lines, the present owner, and Robert E. Gross president of Lockheed, the prospective purchaser. The amount of money involved is $1,500,000. The decision of United to sell came about as a result of the recent decision of all air lines to transfer their operations to the new Los Angeles Municipal Airport. Union Air Terminal is adjacent to Lockheed's subsidiary plant, Vega Aircraft Company, and will be used for testing and delivery activities

TIRED PILOT IS UNSAFE PILOT

(Continued from Page 1)

advanced that the courses we gave last year are now obsolete." Since no book lists all the data known about aviation medicine, lectures given at the course will be printed and distributed to flight surgeons throughout the country.

Dr. Davis Assembles Leading Authorities as Lecturers

As lecturers, Dr. Davis who is in charge of the Air Medical Course at the George Washington University, assembled leading flight surgeons of the Army and Navy Flying Corps and of civil aviation. They included Dr. Herman Burian, Dartmouth College professor and expert in a new optical science called "Aniseikonia". Dr. W. Randolph Lovelace, a reserve Captain in the U. S. Army Medical Corps; Lieutenant Commander Rex White, U. S. N.; Ross A. McFarland, Harvard University professor and Lieutenant Commander in the Naval Reserves; and David L. Behncke, President of the Air Line Pilots Association.

Other lecturers included Commander J. C. Adams, U. S. N.; Lieutenant Colonel R. K. Simpson, U. S. A.; Major John M. Hargreaves, U. S. A.; Dr. Ernest Sheppard of the George Washington University Staff; and Dr. Ralph Greene, Medical Director of the Eastern Air Lines. All presented very interesting papers.

Dr. Greene Lectures on Neurology

Dr. Greene lectured on neurology which is one of the most difficult of all medical topics. His talk drew many favorable comments.

Behncke Discusses the Practical Aspects of Aero Medicine

President Behncke of the Air Line Pilots Association, during his talk said, "Unless flight surgeons balance piloting proficiency against limited physical deficiency, a vast majority of America's wealth of aviation experience will be tossed into the discard." Behncke emphasized he was not asking for any letdown in the rigidity of physical tests for the newcomers in aviation, but strongly urged that aviation medicine exercise a "good bit of common sense" in the periodic examinations of experienced flyers. He charged that a tired pilot was an unsafe pilot and eulogized the present federal law which prohibits air line pilots from flying more than 85 hours in any one month. At one point in his talk he said, "Adventure, but not the romance, has been taken out of flying." Behncke's stand on fatigue was collaborated by Professor McFarland of the Harvard University who said, "Fatigue is as great a danger to the war pilot as enemy bullets."

New Oxygen Equipment Demonstrated by Dr. McFarland Of Harvard

Dr. McFarland demonstrated new improvements in oxygen equipment which consisted of an improved, automatic-type B-L-E Army oxygen mask and oxygen tank and a three-pound emergency-escape oxygen tank with a separate adjustable mask. The oxygen in the emergency tank is under 2,000-pound pressure per square inch—enough to last for 18 minutes.

Device Simple in Design

Use of the combined apparatus will permit combat flying up to 40,000 feet, a ceiling several thousand feet higher than military

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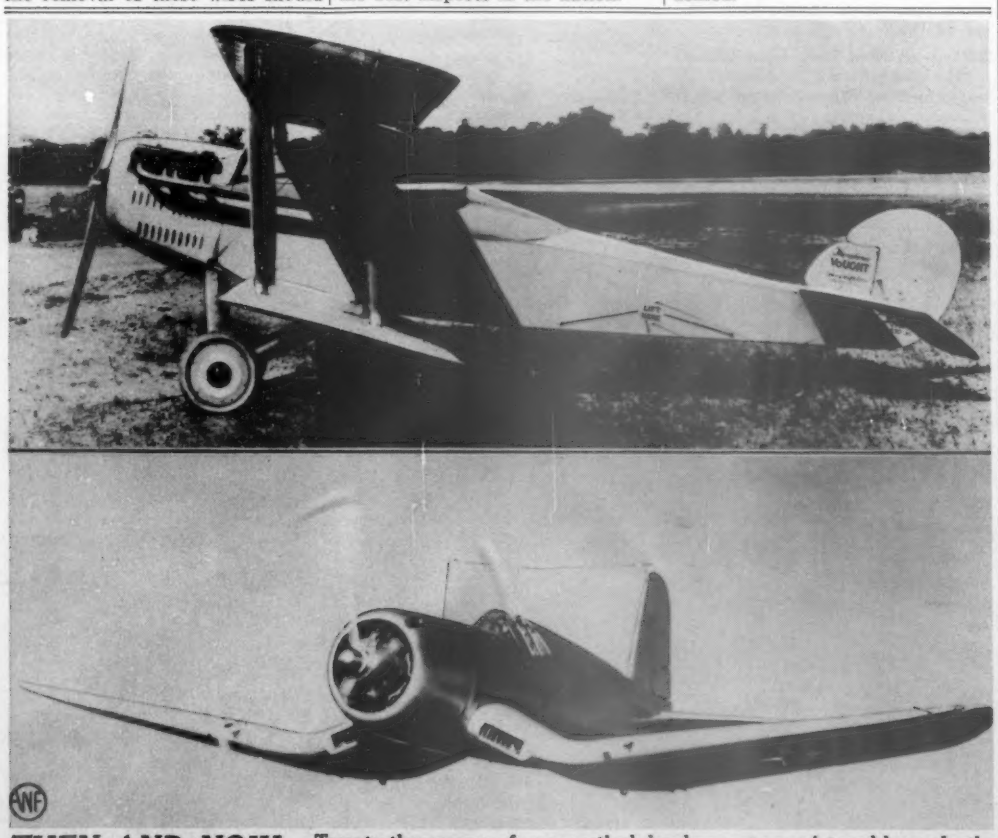
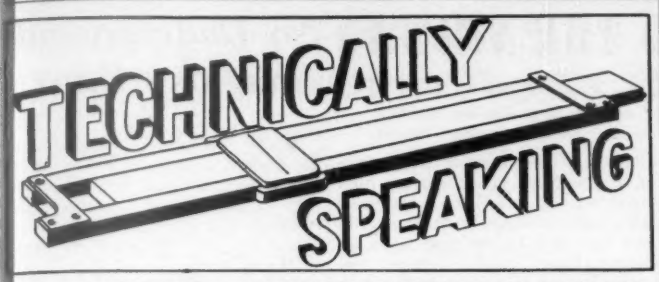


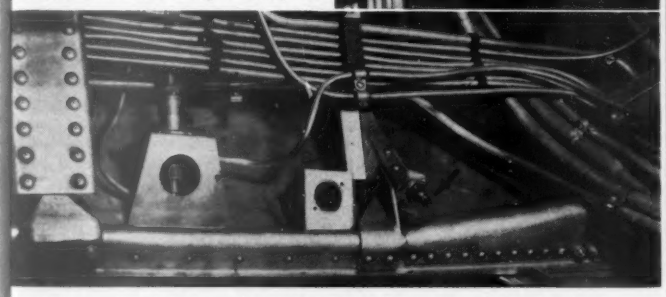
THEN AND NOW **Twenty-three years of aeronautical development are pictured here. In the upper picture, you see an airplane of 1918—the original Vought VE-7 advanced trainer. In the lower picture, is the Vought XF4U-1, heralded as one of the fastest airplanes in the United States today. In 1918, when the Army ordered 1,600 of the VE-7s (only to cancel the order with the signing of the Armistice), the 1,850 horsepower Pratt & Whitney engine, which drives the XF4U-1 through the air at a maximum speed of more than 400 miles per hour, would have been considered incredible.**



SUPERCHARGED AIRCRAFT IGNITION HARNESSES

By Carl E. Swanson, Electrical Engineer, Northwest Airlines, Inc.

The following article is reprinted, in part, from an original paper prepared and presented by Mr. Carl E. Swanson before the National Aircraft Production Meeting of the Society of Automotive Engineers at Los Angeles, Calif., October 31 to November 2, 1940. The original paper contains considerable mathematical, chemical, and other technical discussion not embraced in the extracts reprinted here. The complete paper, together with diagrams and illustrations, appears in the March 1941 issue of the Society of Automotive Engineers' Journal. Permission for reprinting has been granted by both the author and the Society. Mr. Swanson was granted a patent for his ignition distribution system on Sept. 3, 1940, by the United States Patent Office.



Pictured at top is a view of the dessicator together with its mounting and associated pressure gauges. While in the lower photo is a view of the air hose connector (marked by arrow) located in the right wheel well.

It is a fact well known to operators of commercial and military planes that the problem of establishing and maintaining proper ignition performance under all conditions of weather and service, constitutes one of the most difficult and costly problems associated with airplane operation. It has been estimated in the past that at least one-half of the flight interruptions chargeable to airplane power plants can be traced either directly or indirectly to improper ignition performance. One large air line has reported that the cost of its ignition maintenance is approximately equal to the cost of its oil.

Improperly Functioning Ignition System Is Potential Threat to Safety

It is the opinion of most operators that of the three main elements of the ignition system, namely, the magneto, the ignition harness, and the spark plugs, the harness has been, by all odds, the chief offender. Failure of the harness to provide proper ignition distribution has necessitated not only frequent and costly service of this unit but has also necessitated frequent and costly spark plug removals. These considerations in combination with many others, not the least of which is the fact that an improperly-functioning ignition system is always a potential threat to safety, have established this problem well forward in rank of importance. . . .

Provides Means for Escape of Contaminated Air

The supercharged aircraft ignition distribution system is a system which supplies air free from harmful ingredients at a pressure maintained in considerable excess of that of the surrounding atmosphere to the space within the spark plug shield chambers and is a system which provides ways and means by which the contaminated air may be removed from these regions. It is a feature of the system to utilize for the conduction of this air the type of ignition harness which already constitutes a conduit system to the spark plugs, because through such a type of harness, clean air can be transmitted to and into all the spark plug shield chambers and adjacent spaces without adding tubing or additional conduit of any sort. The very important consideration of providing means for the escape of contaminated air from within is accomplished by utilizing for this purpose the inherent leaks of the harness or, if these prove insufficient, to purposely provide such leaks by drilling holes or otherwise making openings in the shielding.

Insures Reliable and Trouble-Free Performance

A careful study of the features and operation of this system . . . will disclose the fact that this supercharged, air conditioned, ignition harness system provides the necessary relief from all the various forms of contamination including dampness encountered in service and thus insures reliable and trouble-free performance of the distribution network.

The presence of air within the harness at a pressure in adequate excess of that of the surrounding atmosphere will prevent the entrance through leaks of water, anti-icer fluid, and oils into the harness during all flight conditions including periods of rapid descent. A further feature of providing means for supercharging the harness from a hangar air hose line or from a small electric driven pump, while the airplane is on the ground with the motors stopped, will enable one to keep the system clear during long layovers in conditions of extremely high humidity or heavy rainfall.

Method Keeps Interior of Harness Dry

By maintaining the air pressure within the shielding in considerable excess of the air pressure without, that is, by supercharging the system, the density of the air within is increased thereby suppressing the corona and the chemical actions associated therewith. Should there still be some nitric oxide or nitric dioxide formed within the shielding it will be forced out through holes or openings provided for this purpose or forced out through the inherent leaks in the harness. Furthermore, by keeping the interior of the harness dry, as this method does, there will exist no moisture therein to combine with the nitric dioxide to form nitrous and nitric acids.

Gases and Fumes Removed

The gases and fumes which enter the harness from the combustion chambers through spark plug core leaks are likewise removed. It is to be noted that it is not absolutely essential that holes or leaks be present in the immediate vicinity of the spark plugs. The vapor pressures of all gases are very high at the high temperatures prevailing near the plugs, thus a powerful influence exists to cause the gases and vapors to be diffused back into the harness and there be forced out through the leaks or openings, wherever they might be. It is a fact, however, that leakages very frequently do appear at the connections of the harness elbows to the plugs.

Insulation Strength Is Matter of Great Importance

The fact that the insulation strength of air decreases rapidly with the decrease in air density which attends an increase in altitude, is a matter of great importance in modern aviation. To compensate for the loss of insulation solely by means of increases in air gap clearances involves a large increase in the physical dimensions of the system and a considerable increase of weight and cost. Now, a supercharge pressure of five pounds per square inch over outside atmospheric pressure will maintain approximately sea level pressures within the spark plug shield chambers and all other spaces connected thereto while flying at an altitude of about 11,000 feet. Higher supercharge pressures will, of course, give even greater insulation gains. As the airplane increases its altitude this type of air insulation failure makes its appearance in the spark plug shield chambers. It is also true that this type of failure frequently appears within magnetos and high tension distributors.

Advisable to Attach Magneto and Distributor Units to Pressure Harness

The feature of using the ignition harness conduit system for the distribution of the supercharged air will simultaneously make the magneto and the high tension distributor recipient of all the benefits received by the spark plug shield chambers because these units normally have their metallic casings or radio shielding directly attached to the metallic conduit or shielding of the ignition harness. Construction of the metallic casings or radio shielding of the magneto and the high tension distributor must, of course, be such as to prevent excessive air leakage therethrough, or else these units will have to be shut off from the ignition harness by means of suitable air seals. Obviously, if these units are shut off from the ignition harness, they will not receive the aforementioned benefits of the supercharge. Since the magneto and high tension distributor are subject to failure attendant

(Continued on Page 7, Col. 3)

UAL First With Pilots' Pension

(Continued from Page 1)

the employees to join in order to make it operative.

Pilots to Receive $1 a Year In An Annuity for Every $5 They Contribute

Individual contributions will not exceed 3 per cent of salaries which include 1 per cent already being paid to the Federal Social Security plan. For every $3.00 contributed by an ordinary employee, he gets back $1.00 a year in an annuity for every year after he reaches the retirement age. Pilots, however, because of lower retirement age, will receive about $1.00 for every $5.00.

When an employee quits or is discharged, he may draw out all his contributions plus 2½ per cent interest.

The company, it is reported, will discuss the plan with its employees in the very near future with the view of putting it into effect during January, 1941.

HUKING ADROITLY LAYS FOUNDATION

(Continued from Page 2)

more rumor has it that the teachers just gave up.

Lays Foundation for Future Serious and Practical Work

After being kicked out of the aforesaid institutions, and as rum-running and some of the rackets had not yet become prominent enough to occupy all of his time, Harry entered the Cooper Union Institute to find out something about engineering. Here he laid the foundation for his serious and practical work that was to come, namely, filling out trip logs and figuring out data to tell some radio operators who don't care, about how fast he thinks he has been going and when he hopes to get there.

"Isn't He An Angel"

Becoming an expert with figures, slide rules, etc., Harry tried to put the newly-acquired education to some practical use. So, he began selling insurance for the New York Life Insurance Company. For five years, this endeavor occupied most of his time but failed to satisfy some urge that seemed to continue bothering him since he had been a baby when his mother had said, "Isn't he an angel."

"Poor" Field—No Hangars, No Airplanes, No Barracks

Probably because of that, we next hear of Harry when he enlisted as a flying cadet in August 1917 to do his part in making this world safe from another war. He was sent to Princeton for ground school and such ground work as available, or thought practical, was inflicted upon his class of unsuspecting heroes. Somewhat confused but still hopeful, the group was shipped to Waco, Texas to become acquainted with them contraptions called flying machines. Upon arrival at Waco they gazed upon Rich Field. At the time it would have been much more appropriate to call it "Poor" Field, account there were as yet no hangars, no airplanes, no barracks, nor any equipment. In the course of time, this deficiency was corrected and life began.

Gossport Gibberish Competes With Roaring Engines

Emerging as one of the successful aspirants of the helmeted and goggled clan, Harry moved to Brooks Field as a pilot, there to take training to become an instructor. Here he went through the agonies of becoming adept in the use of the Gossport system. In case you have forgotten, that was a nightmare consisting of a hose running from the instructor to the student. The instructor talked into one end and the student was supposed to hear what he had said coming out of the other end. Of course, the instructor ended up by screaming so loudly he almost drowned out the sound of the motor and still the student could not decipher the gibberish which emerged to compete in his ears with the roaring of those mighty sixty "hearse"-powered engines. The finale was always the same. A landing was made for no other purpose than for the instructor to make sure that the student could plainly hear the h - - l bawled out of him for not doing something he had never heard of.

Plays Dirty Tricks on Defenseless Airplanes

Mastering (?) the use of this Rube Golberg, I mean, Gossport System, Harry was transferred to Kelly Field as an instructor so he'd get his turn to bawl out someone. Before long, however, a group of mothers of the San Antonio belles prevailed upon the War Department and convinced them that Harry was a menace to the morals of the daughters of the community. Investigation must have confirmed this because shortly afterward Lt. Harry W. Huking showed up at Rockwell Field near San Diego where once more he began to play dirty tricks on some poor defenseless airplanes by sending them up with neophites who thought, or Harry hoped, might be ready to solo.

Worked As Pilot for Far East Seaplane Company

Further activities at Rockwell consisted of advanced training, supply officer for East Field, and Officer in charge of the Rockwell Field Weekly Flight. He finished his work with the service in the capacity of pilot on border patrol with the 9th Aero Squadron. He resigned in September 1919 and worked for about six months as pilot for the Far East Seaplane Company.

No. 2 on UAL Pilot Seniority List

During the previous months, that crazy experiment of trying to carry mail by air had been tried by the Army and then turned over to the United States Air Mail Service. (And now the plot thickens.) The Air Mail Service needed pilots to carry out their expansion program. In April 1920, Harry began a career which has placed him number two on the pilot seniority list of United Air Lines. He became an Air Mail Pilot.

Takes it Easy (?) Now, Thanks to First Officer

His first run was between College Park, Maryland, and Hellar Field in New York where he flew Curtis R's powered by Liberty motors. Proving himself on this run, he was given other assignments which eventually made him cover every division of the transcontinental run. During this time it was his pleasure (?) to fly nearly every type of an airplane used to carry mail. He wrestled with Hiso-powered Standards, single-motored DH's, twin-motored DH's (I understand the less said about them, the better), Curtis Pigeons, Douglas 02M's, Boeing 40's, 95's, 80's, 80A's, 247's, and Junkers. And at the present time he takes it easy while his first officer flies a DC-3 between San Francisco and Salt Lake City.

It Was Wonderful Until the Liberty Stopped

While flying in the East, Harry figured in an experience which was later to make Robert Ripley's column. Of course, Ripley only used the last part of this story. But I am told that Harry and another air mail pilot were up supposedly testing a DH. In the course of the flight, they happened to get near the water front. There, much to their pleasure, they espied several girls in a secluded nook enjoying a sun bath. It was wonderful until the Liberty interrupted everything by stopping. Neither of them had been doing the flying since they had first espied the girls but each thought the other had the controls. Not having either pilot on the ship to hamper it, the DH swung around and made an almost perfect landing on a coal barge.

The photograph shows Harry W. Huking in his full regalia about this time. In 1924 and 1925 he served as Field Manager at Cheyenne for the Air Mail Service but a ground job was not to his liking. He couldn't keep up on his golf and be in the office. So, back to flying.

Harry's Spiraling Procedure Wins Cognomen, "The Hawk"

While flying into Reno, a ground man christened him with his first nickname, "Harry the Hawk." This cognomen was applied because Harry usually took off from Reno and spiraled up over the city to his cruising altitude before starting over the mountains, a procedure in use at the present time.

While flying into Reno during the first years of the Air Mail, a goodly portion of the time en route was spent in looking for likely places to set down in case a motor failed or some other obstacle presented itself. Harry had picked out a large dry lake to the north of Reno and figured it would serve as an emergency field if ever he was unable to get into Reno. Late one afternoon just such an occasion occurred. A heavy squall shrouded the Reno valley but the dry lake was practically in the clear and accessible. Rather than try to fly back to Sacramento,

(Continued on Page 7, Col. 2)

—Acme Photo

CHUTE TROOPS NO, THEY ARE NOT ORSON WELLES' FAMOUS ATTACKERS FROM MARS. THEY ARE U. S. CHUTE TROOPS CLAD IN THE NEW BATTLE DRESS OF THE 501ST PARACHUTE BATTALION, FT. BENNING, GA. THESE NEW JUMP SUITS ARE MADE OF HEAVY SNAG-PROOF OLIVE-DRAB MATERIAL. THEY ARE WORN WITH SPECIALLY DESIGNED JUMPING BOOTS WHICH HAVE AN INNER SOLE OF SPONGE RUBBER IN ORDER TO MAKE THEM LAND WITH MINIMUM JAR SO AS NOT TO CAUSE INJURY.

Medical Clinic—

(Continued from Page 4)

aviators can now attain in actual combat, its designers state.

The apparatus is extremely simple in character. This is how it works:

When the military pilot goes aloft, he dons the new-type B-L-B face mask, now standard equipment in the Army. Not only does the apparatus automatically operate the flow and pressure from the main oxygen tank, but the mask and tube are made of special rubber, which will not freeze in the stratospheric atmospheres (the original B-L-B-type apparatus was hand controlled, was considered too complicated in makeup, and the rubber frequently froze).

Hooked to Regular Supply

The B-L-B mask is hooked up to the plane's regular oxygen supply.

The three-pound emergency tank is carried in a pocket-strap from the left shoulder. A 10-inch anti-freeze rubber tank connects the tank with the emergency auxiliary mask adjusted under the regular B-L-B mask.

While in combat, if anything should disable the regular oxygen apparatus, the pilot can instantly adjust the emergency outfit, and, if his plane is still maneuverable, he will have a sufficient supply of oxygen to permit him to land.

Can Bail Out With Kit

If the pilot or gunner is forced to bail out, however, he can throw off the regular mask and parachute to earth with the emergency kit. Heretofore, when a pilot was forced to bail out, he was compelled to abandon the regular oxygen apparatus because it was too heavy and unwieldy. This sudden abandonment of oxygen usually caused serious physiological reactions.

But what appears to be the simplest improvements in the apparatus is, nonetheless, the most important.

Dr. Lovelace pointed out that in the excitement of actual combat, the pilot's jaw invariably drops. Using the older equipment, he was fed oxygen through the nose, and when he became tense, he naturally started breathing through his mouth, with the result he lost his oxygen supply. This caused the pilot to "black out" and become easy prey for an enemy gunner.

Peril Now Eliminated

The older emergency auxiliary oxygen equipment presented the same peril. The pilot simply stuck a rubber tube into his mouth and bit on it. But when his jaw lowered, either through excitement or because of wounds, the tube dropped out and the flyer was often doomed.

Dr. Lovelace's duties as a surgeon at the Mayo Clinic keep him busy, but his interest in aviation and aviation medicine is so keen he spends all his spare time on it — and his hobby has paid good dividends to aviation.

His collaborators on the new oxygen equipment were Dr. W. M. Boothby, of the Mayo Clinic, and Captain O. O. Benson, director of medical aviation research laboratories at the Army's Wright Field.

DR. GREENE—

(Continued from Page 4)

being emphasized to the extent that medical schools are recognizing the necessity for setting up departments of Aviation Medicine.

Seek to Discover Insidious Defects Creeping Into Pilot's Life

The function of an air line medical department is in no sense regulatory. We have no standards in the procedure of licensure. We fully understand that the Civil Aeronautics Authority performs this duty under conditions of minimum requirements. In the company medical department, there is the responsibility of not only examining the pilot today, to determine his physical fitness for flying, but to assure ourselves that we are giving him the protection, of attempting at all times, to discover any insidious defects that may be creeping into his life which, if neglected and allowed to progress, might eventually result in a medical disqualification.

Consultation Advice from Other Experts

We realize that any human mind is capable of making mistakes. We are, therefore, prone, when necessity indicates, to lean upon other experts for consultation advice. If, after examining a pilot, we reach a conclusion that he has a serious physical defect, it is our practice to extend to him the benefit of expert consultation advice in competent hands. We give the pilot the names of a number of outstanding specialists in the city where he may reside and tell him frankly that we are willing to bow to the superior opinion of the specialist and to be governed thereby. We have found that there is a certain type of physician who, because of lack of knowledge of Aviation Medicine, is inclined to give erroneous opinions which may place the pilot at a disadvantage. Your President, doubtless, remembers the case of a public hearing incident in which a pilot was to be disqualified because of an eye defect. He was medically represented by an elderly eye specialist who admitted that he did not know the eye standards for pilots. The pilot whose status was being questioned was, therefore, placed at a definite disadvantage.

Attempt to Protect Health and Longevity of Pilots

Our medical department, in addition to practicing preventive methods, is giving consideration to pre-clinical methods. By that term, we mean that it may be possible to tell a healthy individual that because of hereditary factors, advancing years may place him in a dangerous position. To illustrate:

(Continued on Page 8, Col. 5)

ALTITUDE AND THE AIRMAN

Ninth installment of the article, "Altitude and the Airman," written by Dr. Ross A. McFarland, and abstracted by Dr. Ralph Greene. Succeeding installments will appear in following issues.

XI. THE ROLE OF ACCLIMATIZATION AS DEMONSTRATED BY THE HIGH ALTITUDE EXPEDITION TO THE CHILEAN ANDES (1935). (Cont'd.)

Observations Made at 9,200, 12,000, and 15,400 Feet

A train was equipped at Antofagasta, Chile, with laboratory, sleeping, animal, and kitchen cars. The first observations were made at 9,200 feet, where the largest open pit copper mine in the world is located (Chile Exploration Company). The train was then taken to Ollague (12,000 feet) and later to Montt (15,400 feet). If one has made the long climb to the summit of Mt. Blanc in the Alps one realizes what an ideal place was discovered for a scientific expedition. The equipment was then transported by truck to a sulphur camp at 17,500 feet, where the superintendent allowed us to make his home into a scientific laboratory.

The highest station was established at the summit of Mt. Aucanquilcha (at 20,140 feet) in a snow cavern constructed by members of the expedition with the aid of the sulphur miners. Contrary to expectations from previous scientific expeditions, the most fit members of the party were able to live fairly comfortably in the snow cavern at 20,140 feet and especially at 17,500 feet, where the main laboratory was maintained. The completely adapted natives and animals, however, afforded a striking contrast to those of us who were native to sea level.

Highest Permanent Community in the World

The sulphur mining community at 'Quilcha is of interest since it forms the highest permanent community in the world. About 150 men live there all year with their wives and children. They attempted to establish camp at 18,500 feet, nearer the mine, but they found it impossible to sleep and general deterioration set in. Now, they live, apparently quite comfortably, at 17,500 feet and walk each day to the mine at 19,000 feet. In the evening, after a long day's work at the mine, the younger men play soccer until dark. The physiological and psychological characsteristics of these men proved to be of unusual interest, and a number of commonly accepted theories about fatigue and human variability under conditions of extreme stress will have to be restated as a result of the findings of the expedition.

No Significant Impairment of Senses

Contrary to the reports of many altitudes, no significant impairment was observed in the mental tests until altitudes as high as 15,500 feet and 17,500 feet were attained. Even at the highest stations the deterioration in the sensory and motor tests was not marked. In the more complex tests, such as the one involving shifting quickly from one type of mathematical problem to another, there was a tendency for the mind to perseverate or diminish in flexibility. There was only a slight impairment in the code test, which involved quickness, accuracy, and close attention in transposing letters of the alphabet. However, in the standardized test for immediate memory, the impairment was very striking at 17,500 and 20,000 feet.

Miners Have Greater Capacity for Work

In comparing the members of the Expedition with the miners, the most striking difference was in capacity for physical work. The miners were able to climb fairly rapidly, carry heavy loads, and do hard manual labor in the sulphur mine at 19,000 feet. This greater degree of fitness in the miners was manifested in their higher scores on the Schneider Index. The average Schneider rating of 35 miners was 14 compared with 7 for the members of the Expedition. The miners tended to have slow pulse rates and low systolic blood pressures, with a well controlled increase in pulse rate on standing and after exercise. If one of the miners developed a high resting pulse rate, it was usually a sign of poor acclimatization and he was sent to sea level for a rest.

Make Experiments On Panagra Flights

At the end of the summer, we carried out some experiments on trans-Andean airplane flights on the Pan American-Grace Airways. We were interested in observing whether one might take a certain substance (ammonium chloride) to counteract the effects of the high altitude. In good weather the average flight across the Andes is made at about 14,000 to 15,000 feet. If the air is rough due to head winds, the flights are occasionally made as high as 17,000 to 18,000 feet. The pilots and each passenger are supplied with oxygen to counteract any ill effects. The initial reaction of going to a high altitude is over-breathing in attempting to compensate for the oxygen lack. This causes an excessive amount of carbon dioxide to be blown off the lungs and upsets the acid-base equilibrium of the blood. We reasoned that if the blood could be made very acid (with salt or ammonium chloride) which is associated with under-breathing, the excessive ventilation might be diminished and hence the effects of the altitude counteracted. The first experiment bore out the theory, i. e., those who ingested the ammonium chloride fared better than those who had not. On the return flight, however, an unanticipated variable crept into the experiment. The plane encountered head winds and rough air, making it necessary to ascend to 16,500 feet during the flight over the highest mountains. Those who ingested the ammonium chloride became unusually nauseated. Although it may be true that ammonium chloride will heighten one's ceiling by 4,000 to 5,000 feet in smooth flying, no substance has been discovered which will prevent airsickness in very bumpy weather. Undoubtedly, the most satisfactory answer to the ill effects of high altitude and bumpy weather is the kind of airplane fuselage which will maintain sea-level pressure at high altitude. With this kind of equipment, rapid ascents and descents can be made from high enough altitudes (18,000 to 25,000 feet) where smooth air and clear weather can be obtained more frequently. The painful effects in the ears from too rapid descents also will be avoided by airplanes with such equipment.

No Underground Hangars—Knox

Major commercial airports in the United States cannot be effectively camouflaged nor equipped with underground hangars and runways for wartime military purposes, recently reported Secretary of Navy, Knox.

The Knox statement followed a warning in the House by Representative John C. Schafer of Wisconsin that lack of vital protection at civil airports constitutes a dangerous weakness in national defense.

Cost Called Excessive

"Apart from financial considerations," the Secretary said, "the form of protection suggested would adversely affect, to a serious degree, the flexibility and efficiency of aircraft operation.

"Studies clearly indicate that the costs of the installation to which you refer are so excessive and construction so time-consuming as to preclude an orderly and expeditious completion of the shore development features of the planned program of aviation expansion."

—*United Air Lines Photo*

FLYING BOXCAR Back in 1842, Tennyson wrote: "Saw the heavens fill with commerce, argosies of magic sails, pilots of the purple twilight, dropping down with costly bales." These beautifully-molded words amount to a prophecy that has today become a reality. A glance at the above night scene is the verification. United Air Lines flies an all-cargo New York to Chicago nonstop schedule to handle growing mail and express shipments.

NEW BOOKS

CAA BULLETINS—

All the technical information a pilot needs, and more, is contained in a series of ten bulletins prepared by the Civil Aeronautics Administration of the Department of Commerce and made available to the public at nominal cost. Each bulletin covers a separate subject presented in simple style by an expert in the particular field. No attempt is made to exhaust each subject, but for the busy pilot who must know something about many things, these bulletins afford an illuminating description of the fundamentals, presented in the form of texts with questions appended to the end of each chapter to test the reader's knowledge. This is not to say that these books are in the class of light reading. On the contrary, everything a pilot needs to know and a goodly store of knowledge that he may never (except in possible rare instances) have occasion to use, are painstakingly and skillfully presented.

Following is a list of the bulletins which may be obtained from the Government Printing Office, Washington, D. C., at the prices shown.

1. CAA BULLETIN #5, FLIGHT INSTRUCTOR'S MANUAL, PRICE 30c.

In this book an effort has been made to standardize flight instruction and, at the same time, to provide the flight instructor with information that will enable him to train his students as safe pilots equipped with the maximum of knowledge and technique in minimum time. In addition, it is believed that the book should aid the instructor in the further development of his instructing ability.

2. CAA BULLETIN #22, DIGEST OF CIVIL AIR REGULATIONS, PRICE 20c.

The purpose of this publication is to explain to the student pilot in as nonlegal phraseology as practicable those provisions of the Civil Air Regulations which most directly affect the pilot. Although designed primarily for use as a textbook in the Civilian Pilot Training Program, the book should be equally valuable to anyone preparing for the examination on the Civil Air Regulations required for issuance of a pilot's certificate.

3. CAA BULLETIN #23, CIVIL PILOT TRAINING MANUAL, PRICE 50c.

This book is designed primarily for the use of students taking the private ground and flight courses and the restricted commercial flight course of the Civilian Pilot Training Program. Therefore, the material contained herein is outlined in accordance with the courses developed for that program. However, an effort was made to make it equally valuable to all civilian student pilots as a standardized handbook of safe flying.

4. CAA BULLETIN #24, PRACTICAL AIR NAVIGATION, PRICE $1.00.

This is the fourth edition of what was formerly known as Special Publication #197 and is designed for use as a textbook on air navigation. Prepared for the CAA by the Coast and Geodetic Survey, this book treats the subject of air navigation very thoroughly, explaining the use of aeronautical charts and navigation computers, instruments, and the use of radio. One chapter is devoted to the subject of celestial navigation.

5. CAA BULLETIN #25, METEOROLOGY FOR PILOTS, PRICE 75c.

This book was prepared by the United States Weather Bureau for use as a meteorology text in the preliminary ground course of the Civilian Pilot Training Program. The treatment assumes that the student has had no previous training in meteorology. The subject matter is developed in such a way as to give the student pilot a sound background in the latest

(Continued on Page 8, Col. 3)

Oh! to Be Safely Up In The Air

(Continued from Page 5)

he decided to land on this dry lake and wait for the squall to pass over, or for the ground personnel to come out and pick up the mail.

Pays Informal Visit to Shack of Snake-Charming Hermit

There was a shack on the edge of the dry lake so Harry landed nearby and rolled up within calling distance. He cut his motor.

"Hello, anybody home?"

The lone occupant of the shack moved out of the doorway and sauntered over to the ship.

"Hiya. Lost?"

"No. There's a squall over Reno and I couldn't get in. I thought I'd land here and wait for it to move on."

"Come in and set awhile."

He led the way into his small shack. Harry started through the door but jumped back.

"Look out. There's a snake," he yelled.

His host unconcernedly stepped over the long snake that lay across the floor. "Yeah. There's a number of them around here. Pets of mine. Come on in," he calmly explained.

Harry cautiously approached the door and surveyed the snake. Its tail was decorated with as large a set of rattles as he cared to inspect.

"But it's a rattler."

"They all are. Come on in. They won't hurt you if you don't hurt them."

Five Huge Rattlers Lay Coiled on the Floor

Harry carefully circled around the rattler. In doing so he almost brushed against another pet beside the stove on a ledge. Very ill at ease and ready to dash for safety, Harry sat down on a box while he peered into the corners of the dimly-lit shack and located five huge snakes peacefully coiled on the floor.

"Yeah. They're pets of mine," the hermit began. "I live out here by myself, doing a little prospecting now and then. I tame them and they make good pets."

"Do you draw their fangs?" Harry asked.

"Oh, no. Don't have to. I don't hurt them and they don't hurt me. I can take any snake in the desert and calm him down so's I can carry him home in a half an hour or so if I've a mind to."

He Hadn't Been Bragging Either

As soon as he could get outside without offending his host, Harry thought the squall had cleared away. Oh, to be safely up in the air again. Upon his arrival at Reno sometime later, Harry told of his new acquaintance. Sometime later, several of the boys from Reno made a call on the prospector and his pets. He hadn't been bragging either. They saw him carry home a rattler they had found.

In 1922, Mary E. Pfatenhauer agreed to put up with Harry's faults and bad habits and they were married in San Diego. Now they can be proud of two sons and two daughters. Harry likes to play chess and at present is very enthusiastic in donating his spare change for films and camera equipment as befits an expert motion picture camera fan. He is called upon quite regularly by a committee for the Society for the Prevention of the Use of Profanity. You see he plays golf and the ball doesn't always go where he looks.

Pioneered Early Pilots Organizations

Harry was a member of the early Air Mail Pilots of America, and a member, and at one time president, of the succeeding organization, the National Air Pilots Association. He also is a charter member of ALPA, and has held various offices from Chairman on down. At the present time, he is affiliated with the job of correspondent for this column. At the present writing, he and Mary are in Mexico on their vacation. We hope they are having a wonderful time. When you see him, ask him how he got the nickname, "Curly."

TECHNICALLY SPEAKING—

(Continued from Page 5)

upon loss of air insulation and the presence of gases, acids, and moisture, especially under conditions of exceedingly high altitude operation, construction of these units suitable for supercharging and attachment to the ignition harness is not only desirable but is essentially provident.

Injected Air Should Be Free of Harmful Ingredients

The air which is injected into the ignition harness and transmitted therethrough to the spark plug shield chambers, and to the magnetos and distributors if these be a part of the system, should be, as before stated, free from harmful ingredients. Best results can be obtained by providing for this purpose air which is not only clean, but air which has very low moisture content. For this reason it has been found desirable to draw this air from a region where the temperature is low and from a region which is protected from rain, sleet, snow, and ice, and to pass this air through some chemical drying compound which will remove essentially all of the water vapor content. By providing extremely dry air for injection into the ignition system, the possibility of having condensation of water vapor take place within the system is eliminated, and the ability of the air to absorb and carry out any moisture that might already exist within will be greatly increased. It is not to be inferred from these comments that it is always absolutely essential that the input air be subjected to a drying process. An air intake located in a region of low temperature is preferable to one located in a region of high temperature for the reason that the air from the low temperature region will, in general, have the least absolute humidity. . . .

Continuous Flow of Air Has Desirable Cooling Effect

In concluding this summary of the features of the supercharged system, attention is directed to the fact that the continuous flow of air through the ignition harness to the spark plug shield chambers has a desirable cooling effect on the wire contained in these shield chambers and on the wire contained in the spaces adjacent thereto. The insulation on the wire in these regions is frequently found burned and charred due to the high temperatures existing within and near the spark plugs. This is especially true when engines are operating with high power output at high altitudes.

Subjected to Rigorous Laboratory and Flight Tests

The supercharged ignition system has been subjected to severe laboratory and flight tests. In the laboratory, the entire ignition manifold, together with all the individual conduits to the spark plugs, and the spark plugs themselves, which were in turn fitted to carbon dioxide "bombs," were completely submerged in water for twenty-five consecutive hours. At the end of this period, the system was still functioning perfectly. A rigorous examination was then made of the interior of the system to determine whether or not any moisture was present therein. The examination disclosed that the entire system was perfectly dry. Some water was then purposely admitted within the system and the submersion test was resumed. After a short period of time the interior of the system was re-examined and again found to be perfectly dry, thus proving that the method functioned to remove moisture from within. By special permission of the Civil Aeronautics Authority, the system was then installed on one engine of a transport airplane regularly operating from Chicago to Seattle. After and throughout more than five hundred hours of such operation under all conditions of flight and weather, the interior of the ignition distribution system and the spark plug shield chambers remained entirely free from all moisture, fluids, oils, and other impuri-

(Continued on Page 8, Col. 2)

JUST LOOK AT THE DAMNED THING!

Senators Alben Barkley and Pat McCarran were indulging in a slight altercation—commonly referred to as congressional debate. Suddenly, Pat's "Irish" came to the fore and he said: "The remarks of Senator Barkley remind me of the story of an incident in which a very able attorney was trying a personal injury suit in which the question of the flattening of a wheel was involved. After having listened to experts, every one of whom said the wheel, then and there standing in court, was a perfect circle, he turned to the jury and said: 'You have listened to Mr. So and So, a great expert, who says the wheel is a perfect circle, and you have listened to another who says the wheel is a perfect circle, but, gentlemen of the jury, just look at the damned thing.'"

* * *

ONE FOR THE BOOKS

According to a report recently received, a British Spitfire pilot was shot down in the vicinity of Berlin. When his captors closed in with drawn weapons they were flabbergasted when the young British airman paid no attention to them and nonchalantly peeled off his flying equipment revealing that he was dressed in full evening clothes. Soup-and-fish to you. The squareheads may be clever about certain things but they are still busy trying to figure out this one.

* * *

WAS HE EMBARRASSED!

Four planes streaked through the air immediately above four enemy tanks. Suddenly five-pound bombs were seen hurtling through the air. The bombs explode and lo—two generals, other officers, and a group of newspapermen are spattered with . . . flour. It all happened the other day near Ogdensburg, New York, when four light reconnaisance planes were demonstrating methods of stopping four tanks from a height of about 300 feet with five-pound flour sack bombs. One of the "bombs" shot from the rack and narrowly missed the bigwigs and onlookers. My, my, was that bombardier embarrassed!

* * *

THAT'S FAIR ENOUGH ISN'T IT?

Who said there was a shortage of copilots? Here's a letter from a likely sounding applicant for a job which was written to a major air line to prove that there isn't. For obvious reasons, names have been deleted.

22 February 40

Dear Sir:

I have found in a magazine about this terminal flight field. I am asking you if you could send me at your terminal for little more flight training. I have been in a plane and I know pretty much about them. You do not have to worry about me, I can get along with your flight instructor. You see their is a man who has an airplane of his own and he lives near a field and that is where I learnt to fly, but I want to come over and learn to fly Transport Planes, and pursuit planes, and attack planes. I want to learn to operate all kinds of aircraft, not just the Biplane type. So, I am asking you to let me come over at your terminal in — — to learn different types of Aircraft operations. If you think you must have to be paid for the flight tuition I will pay you for them as soon as I graduate and get my flying license. I am willing to pay you for tuition. So, please send me a train ticket and let me know if you charge room and board free of cost, and, after I graduate and get my license for the Commercial Transport Pilot Course I will pay you for room and Board Cost and train fare, that's fare enough isn't it? And if you cannot send me a train ticket I promise you I will come there anyway to train for flying different types of Aircraft. If you cannot send me a train ticket I will be there at your terminal this spring. Please do the best for me because I have no job and I am out of money and don't know what to do. So, please help me get my license for Commercial Transport Pilot and then after that I will pay you for the Course. Please write back to me soon.

Yours Truly,

* * *

IMAGINE THAT

To the right is a recent candid shot of Old Man Behncke doing a little indulging in the practice of what he preaches. A certain air line derives a great deal of gleeful pride from the slogan "Our Air Line Is Run by Pilots," or something like that. ALPA can justly claim "a squeak from the same blast," because it is likewise run by flyers.

* * *

MAYBE THAT'S WHY THE GREEKS ARE WINNING

General Metaxas, brave and courageous leader of the Greeks, is also competent in the cockpit. However, he has one foible that is unbecoming to an airman, that is absent-mindedness. One story told about him concerns a seaplane flight. He was about to land the ship on good old Mother Earth when a thoughtful companion said: "Excuse me, General Metaxas, but it would be better to come down on the sea. This is a seaplane." At this point Metaxas landed safely on the sea, turned to his thoughtful companion and thanked him for his advice and tactfulness and straightforward opened the door of the cockpit and stepped into the sea.

* * *

TRUE, BROTHER, TRUE

Here's another one for the book. It seems that an engineer and his fireman were barging sprightly along on a single railroad track pulling a string of rattlers. Suddenly, the engineer looked ahead, and much to his surprise, observed a train approaching swiftly from the opposite direction on the same track. Unable to believe his eyes, he beckoned to his fireman to take a look down the track out of the other side of the cab and asked, "Do you see the same thing that I do?" The fireman took a look and remarked dryly, "What a hell of a way to run a railroad."

CAME THE DAWN

Since the late great Brigadier General "Billy" Mitchell demanded a separate air force and got a court-martial instead, flying officers who agree with him have kept to themselves. The Air Corps, controlled by groundling officers of the General Staff, rocked along as a branch of the Army, and in 1940's emergency it found itself in the Army's fix: a long way from M-Day trim. But many a flying man could see, close ahead, the day when Billy Mitchell's demand for separate existence would be outmoded. For the inevitable result of the growing strength and tacti-

—Wide World Photo

LIEUT. GENERAL EMMONS
He will have 17 wings.

cal importance of military aviation was that soon it would have all the representation it needed (like infantry, field artillery, cavalry) in the top crust of the U. S. Army. Last week the day dawned.

For letting the sun come up, the Air Corps could thank the Army's Infantryman Chief of Staff, General George Catlett Marshall. Soon after he got his four stars in September 1939, General Marshall broke Army precedent by appointing an Air Corps officer — bulky Brigadier General Frank Maxwell Andrews—as his G-3 (in charge of operations and training). First flying officer ever to head a General Staff division, Frank Andrews was also notable as the only Air Corps man among the U. S. Army's policy makers, at a time when one of the Army's first jobs was to catch up with Adolph Hitler's *Luftwaffe*.

Last week General Andrews was no longer unique. Appointed Deputy Chief of Staff was another Air Corps man: genial, white-haired Major General Henry H. ("Hap") Arnold. A West Pointer (class of 1907—a year after Frank Andrews), "Hap" Arnold learned his flying from the Wright Brothers, has kept at it since 1911, has commanded the Air Corps for two years. Kicked upstairs to the staff job, he will have charge of Air Corps matters under George Marshall.

"Hap" Arnold's transfer was only part of the Air Corp's rosy dawn. Full sunrise came in a list of promotions of 26 general officers. They will help boss an army, ground and air, that is being increased from 227,000 to 1,400,000 in one year. Heading the list as No. 1 U. S. flying officer was West Pointer Delos Carleton Emmons, commander of the GHQ Air Force and until last week "Hap" Arnold's subordinate. George Marshall's list gave Delos Emmons the rank of lieutenant general, shared only by the commanders of the U. S.'s four field armies. No airman had ever flown to such a military altitude.

Day before, Infantryman Marshall had given Flier Emmons a good idea of the force he was to command. Reorganizing the Air Corps on a wartime basis, he announced that the four Air Corps wings in the continental U. S. (now commanded by brigadiers) would be expanded to 17 as fast as pilots and planes were ready. Army airmen hoped that the 12,800 fighting craft needed would be ready before the promised delivery date (late in 1942), set out to expand the Air Corps' enlisted strength from 45,000 to 163,000. They did not need to worry about pilots. Annual output after next year will be 12,000.

Since 1939, the GHQ Air Force has been under the direct command of the Chief of Air Corps. Last week George Marshall changed that setup too. To the Chief of Air Corps (a post now temporarily filled by Major General George H. Brett) were left the jobs of training, procurement, research, etc. As field commander of U. S. armies, George Marshall put Delos Emmons' fighting unit directly under his own command. Farseeing military fliers thought they could see another day, when an Air officer might command an army, might even be Chief of Staff.

Courtesy TIME, The Weekly Newsmagazine.

Ignition Harness—

(Continued from Page 7)

ties. Many of the flights made during this period were made under conditions of heavy rainfall, or under conditions when much anti-icer fluid was used. During the first two hundred and fifty hours of the aforementioned flight test the ignition harness on the other engine of the same airplane admitted sufficient moisture and anti-icer fluid to necessitate frequent draining of the manifold and drying of several of the leads within the shield chambers. Both ignition harnesses had like construction but during the first two hundred and fifty hours of the flight test only the one ignition system was recipient of the benefits of the supercharge.

Northwest DC-3's Are All Equipped with Systems On Both Engines

At the present time (September 6, 1940) the entire Northwest Airlines Douglas DC-3 fleet is equipped with supercharged ignition distribution systems on both engines of each airplane. To date the accumulated record of flight service on these new harnesses exceeds 5,000,000 engine miles. At no time during this period has there been a single case of trouble attributable to harness contamination and there is not a single instance of any moisture or any other fluid being found within one of these systems.

The insulators which surround the ignition wire within the spark plug shield chambers have been found to remain dry and clean throughout an entire engine service period of 600 hours and complete harnesses have been reinstalled on newly-overhauled engines without any replacement of insulators.

Noticeable Decrease in Spark Plug Trouble

There has also been a very noticeable decrease in spark plug trouble. In fact, the "off schedule" spark plug removals have been practically eliminated.

A container holding approximately ¾ pound of Activated Alumina drying compound has been found to suffice for periods ranging from more than three weeks of operation in cold weather to approximately one week of operation in summer weather under conditions of high temperature and much rainfall. These figures apply to a two engine airplane having twenty-eight spark plugs per engine.

Greatly Improves Reliability of Radio Communication

Radio reception has also been very greatly improved by the addition of the supercharged harnesses. Formerly, pilots would have their communications disturbed by noises associated with spark-over and leakages in the spark plug shield chambers, especially under conditions of rain. By eliminating this trouble, the new system has greatly improved the reliability of communication.

CAA Bulletins Reviewed—

(Continued from Page 7)

meteorology theories and practices to the end that he might understand and discuss intelligently his weather problems with the meteorologist who prepares the maps and who makes airway forecasts. For the student who wishes to specialize in meteorology, more advance training is necessary.

6. CAA BULLETIN #26, AERODYNAMICS FOR PILOTS, PRICE 30c.

This book has been especially prepared for use as a text on aerodynamics in the controlled restricted commercial course of the Civilian Pilot Training Program. Since the program has as its primary purpose the training of airplane pilots rather than aeronautical engineers, the material is presented, in so far as possible, from the standpoint of the pilot rather than the engineer. Every effort has been made to handle the subject in such a manner as to bring it easily within the grasp of a student equipped with a limited background of mathematics and physics.

7. CAA BULLETIN #27, PILOT'S AIRPLANE MANUAL, PRICE 30c.

This book has been prepared for the purpose of familiarizing the student pilot with the structure, maintenance, and rigging of aircraft. It is primarily designed to serve as a textbook in the controlled restricted commercial ground school course of the Civilian Pilot Training Program and as such is used in conjunction with CAA Bulletin #26, Aerodynamics for Pilots. The treatment of the subject matter in the manual is of a technical nature providing factual information from a generalized point of view. In use, it may be supplemented by reference to manufacturers' manuals and other textbooks if more detail is desired.

8. CAA BULLETIN #28, PILOT'S POWERPLANT MANUAL, PRICE 75c.

This book is designed for use as a textbook in the Civilian Pilot Training Program specifically for use in the ground school work of the controlled restricted commercial course of the program. However, the book should be of great assistance to all flying students preparing for the examinations required for issuance of the commercial pilot's certificate.

9. CAA BULLETIN #29, PILOT'S RADIO MANUAL, PRICE 25c.

This book has been designed primarily for use as a text in the Civilian Pilot Training Program. It will also be of value to all pilots, aiding them to make a full and efficient use of the airway radio facilities and aircraft radio equipment. An entire chapter is devoted to present-day application of radio in aeronautics although the subject of radio navigation is also treated in CAA Bulletin #24.

10. CAA BULLETIN #30, GROUND INSTRUCTOR'S MANUAL, PRICE 15c.

This book is designed for the use of ground instructors in the Civilian Pilot Training Program. It covers both the controlled private ground course and controlled restricted commercial ground course. The private course is that originally called the "primary" course and the restricted commercial course is that originally called the "advanced" course. The manual is related directly to the texts prepared for the two courses. The private course is to be used in conjunction with CAA Bulletin #24, Practical Air Navigation, and CAA Bulletin #25, Meteorology for Pilots. In the restricted commercial course it is to be used in conjunction with Aerodynamics for Pilots, Pilot's Airplane Manual, and Pilot's Powerplant Manual.

These books, at the prices quoted above, are furnished with paper covers, but fabrikoid covers may be obtained at extra cost.

New Deal For The Column

(Continued from Page 2)

now, and deferment would — for the time being—be the order of the day. Naturally, should actual war come to us, all of these reserves would desire active duty, and then the only training necessary would be that of formation flying, bombing, and gunnery — a refresher on the strictly military side. This could be accomplished in a comparatively short time. The majority seemed to feel that the job of transportation in itself would be of major importance in the event of an emergency, and all agreed that the air line pilots, as a group, constitute a valuable, and willing adjunct to the national defense.

Several members stressed the importance to all of us in checking closely on the 85-hour time limitation, and urged that each pilot keep a record of his own time during the month and make sure that no violations occur. It's our responsibility, and it was for our protection that the law was passed.

"Pimples on the Sphere of Progress"

Closed shop, nonmembers, and loyalty were all discussed as one subject. Sounds mixed up. Really not a bad place to put these three items under one head—all directly bearing on the other. Consensus of opinion: Closed shop, unnecessary due to the fact that there are very few nonmembers of the ALPA now flying the line. All companies recognize the ALPA as a mutual benefit organization. They know that the members of the ALPA are loyal—loyal to the company as well as to the association, and to each other. They must also know that the nonmembers are not loyal to anything—company, fellow pilots, or organization. Belief: These on-the-fence nonmembers, not being loyal to anything, must be drifters and will soon drift on to something else where loyalty, sincerity, and good fellowship are not factors. In other words, they were called "pimples on the sphere of progress," and it was believed they would soon be squeezed out.

Don't Be a Knocker

Loyalty then came up as a subject alone. Due to the fact that the Air Line Pilots Association was formed for the purpose of mutual benefits for all air line pilots, all enjoy the fruits of accomplishment. Every member owes

LOOK AHEAD TO PROTECT PILOTS

(Continued from Page 6)

it may be stated with confidenc that if one has a blood relative even as remote as a first cousin who is known to have had dia betes, and he allows himself, i middle life, to become excessivel overweight, he is almost very ce tainly doomed to develop diabete In fact, the relatives of diabetic are regarded as potential cases o diabetes, far in advance of the m perience of symptoms. We are be ginning to believe that we can ad vise certain people that their his tory and background is suggestiv that they may become ill with ga tric ulcer, pernicious anemia o other similar defects. Thus, we ar attempting to look far ahead an protect the health and longevity o our pilots.

plenty loyalty to the association Don't be a knocker, on-the-fencer If there is anything you don't like it is up to you as an individua member to take this matter up i the proper way to correct or cla ify it for the advancement of you profession. Stick together at a times. Competition builds all bus nesses and is excellent for the fly ing industry. Don't let competitio become a factor for personal feel ings or petty animosity among th pilots. All companies have excel lent officials for the purpose o ironing these matters out. Le them do it. Every order, eithe from the company or governmen regarding things pertaining to fly ing en route or let-down proced ures, should have ALPA represen tation. Be loyal to your Associa tion, to your company, and t your profession. Don't undertak any petty stunt, thought up b some press agent, for publicity no directly pertinent to the flyin profession. In other words, neve do anything that would be degrad ing to your profession. Be loya . . . Kinda sounds like an editoria —but that's what was said.

"Lo Que Ha Ser No Puede Falter

"Lo que ha ser no puede falter —read in a story recently. Not new saying by a jugful — hear many times in the Latin America countries. Best translation: "Wha is to be cannot fail." It kinda ex presses the attitude of all pilots.

Yes, sir! It certainly is astound ing the things talked about at on of those dinners and after session —no d - - n wonder it takes s much time to hold a council mee ing.

What do you think?

GROOMING **Keeping the world's largest airplane clean is n small task. You scratch my back, and I'll scratc yours, would appear to be a fitting caption for this unusual scene "Valets" have been detailed to dust the giant wings and fuselage o the B-19, Army super-bomber now nearing completion at the Dougla Aircraft plant in Santa Monica, Calif. In preparation for the grea craft's emergence from its hangar, all exterior surfaces — totaling i area more than 8500 square feet—are being dusted and polished to flawless gleam.**

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